

ABSTRACT

An eddy current sensor that can be mounted on the outside of a casing for a turbine or other rotating machinery to measure characteristics of nearby, moving, electrically conductive objects through the casing. Monodirectional and omnidirectional sensors are provided. High-strength uniaxial permanent magnets generate static magnetic fields. A signal voltage is produced on a wound coil in response to a variable magnetic field caused by eddy currents in the conductive object as the conductive object passes through the stationary magnetic field. The present invention sensors are also directed to measuring characteristics of turbine blades through jet engine casings.